

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Letters Patent of:  
Brian Kearns

Patent No.: 7,239,853

Issued: July 3, 2007

For: ANTENNA SWITCHING CIRCUIT

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**REQUEST FOR CERTIFICATE OF CORRECTION  
PURSUANT TO 37 CFR 1.323**

Attention: Certificate of Correction Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Upon reviewing the above-identified patent, Patentee noted errors in claims 1 and 4 which should be corrected. A mark-up version of the claims 1 and 4 is show below.

The errors now sought to be corrected are inadvertent errors the correction of which does not involve new matter or require reexamination. Specifically, the term “impedances” has been replaced with “phase shifting elements” to provide proper antecedent basis for “first and second frequency-dependent phase shifting elements.” See claim 1, line 16 of the issue patent. Additionally, the terms anode and cathode have been reversed within the designated portions of the claim to conform to Figures 1-5, 9 and 11 of the drawings and the corresponding portion of the description. Applicant submits that a person of skill in the art at the time of the present invention would understand these corrections to be minor informalities of structural insignificance.

Transmitted herewith is a proposed Certificate of Correction effecting such corrections. Patentee respectfully solicits the granting of the requested Certificate of Correction.

Claim 1. (Currently Amended) A switching circuit for use at the antenna of a multiband mobile cellular handset, the circuit comprising:

- an antenna port,
- a transmit (TX) low band port,
- a TX high band port,
- at least one receiver (RX) port,

the circuit further comprising a single pole, triple throw (SP3T) solid state voltage-controlled switch which includes a plurality of single pole, single throw (SP1T) solid state switching devices to selectively connect any one of the TX low band port, TX high band port and RX port to the antenna port

the antenna port is connected to the TX low band port via a first SP1T device, to the TX high band port via a second SP1T device, and to the RX port via first and second frequency-dependent phase shifting elements connected in series,

the switching circuit further including a first tuned circuit connected to the junction of the first and second frequency-dependent phase shifting elements via a third SP1T device and a second tuned circuit connected to an end of the second frequency-dependent phase shifting element via a fourth SP1T device, the first tuned circuit being tuned to resonate substantially at a center of a TX high band frequency range, the second tuned circuit being tuned to resonate substantially at a center of a TX low band frequency range, the first frequency-dependent phase shifting element corresponding to a quarter wavelength at frequencies in the TX high band frequency range, and the first and second frequency-dependent impedance phase shifting elements in combination corresponding to a quarter wavelength at frequencies in the TX low band frequency range,

wherein the first SP1T device includes ~~an anode~~ a cathode connected to the antenna port and ~~a cathode~~ an anode connected to the TX low band port, wherein the second SP1T device includes ~~an anode~~ a cathode connected to the antenna port and ~~a cathode~~ an anode connected to the TX high band port, wherein the third SP1T device includes an anode connected to the junction of the first and second frequency-dependent impedance phase shifting elements and a cathode connected to the first tuned circuit, and

wherein the fourth SP1T device includes an anode connected to the end of the second frequency-dependent impedance phase shifting element and a cathode connected to the second tuned circuit,

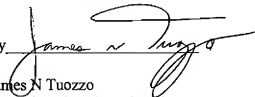
the tuning circuit further including a first voltage input terminal connected to the anode of the first SP1T device and the cathode of the third SP1T device and a second voltage input terminal connected to the anode of the second SP1T device and the cathode of the fourth SP1T device.

Claim 4. (Currently Amended) A switching circuit as claimed in claim 1, wherein the first and second frequency-dependent impedances phase shifting elements are first and second LC networks.

Please charge our Credit Account in the amount of \$100.00 covering the fee set forth in 37 CFR 1.20(a). The Commissioner is authorized to charge any deficiency of up to \$300.00 or credit any excess in this fee to Deposit Account No. 04-0100.

Dated: August 30, 2007

Respectfully submitted,

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CERTIFICATE OF CORRECTION**

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PATENT NO. : 7,239,853 B2  
APPLICATION NO. : 10/714,023  
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INVENTOR : Brian Kearns

Claim 1. A switching circuit for use at the antenna of a multiband mobile cellular handset, the circuit comprising:

an antenna port,  
a transmit (TX) low band port,  
a TX high band port,  
at least one receiver (RX) port,  
the circuit further comprising a single pole, triple throw (SP3T)

solid state voltage-controlled switch which includes a plurality of single pole, single throw (SP1T) solid state switching devices to selectively connect any one of the TX low band port, TX high band port and RX port to the antenna port

the antenna port is connected to the TX low band port via a first SP1T device, to the TX high band port via a second SP1T device, and to the RX port via first and second frequency-dependent phase shifting elements connected in series,

the switching circuit further including a first tuned circuit connected to the junction of the first and second frequency-dependent phase shifting elements via a third SP1T device and a second tuned circuit

connected to an end of the second frequency-dependent phase shifting element via a fourth SP1T device, the first tuned circuit being tuned to resonate substantially at a center of a TX high band frequency range, the second tuned circuit being tuned to resonate substantially at a center of a TX low band frequency range, the first frequency-dependent phase shifting element corresponding to a quarter wavelength at frequencies in the TX high band frequency range, and the first and second frequency-dependent phase shifting elements in combination corresponding to a quarter wavelength at frequencies in the TX low band frequency range,

wherein the first SP1T device includes a cathode connected to the antenna port and an anode connected to the TX low band port,

wherein the second SP1T device includes a cathode connected to the antenna port and an anode connected to the TX high band port,

wherein the third SP1T device includes an anode connected to the junction of the first and second frequency-dependent phase shifting elements and a cathode connected to the first tuned circuit, and

wherein the fourth SP1T device includes an anode connected to the end of the second frequency-dependent phase shifting element and a cathode connected to the second tuned circuit,

the tuning circuit further including a first voltage input terminal connected to the anode of the first SP1T device and the cathode of the third SP1T device and a second voltage input terminal connected to the anode of the second SP1T device and the cathode of the fourth SP1T device.

Claim 4. A switching circuit as claimed in claim 1, wherein the first and second frequency-dependent phase shifting elements are first and second LC networks.